

Work Order ID 75961

November-02-11 10:41:35 AM

75961

U/R

Page 1

Item ID: D3391-025

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Aft Tube Assembly

Stop

NS2

Start Date: 02/11/2011 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: M.L.J

Date: 11/11/02

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr								
D3391	Rev H U/R/ DEO	11/11/02							
100		0.00							

100

Mori Seiki

Mori Seiki.CNC Lathe Large

Memo

0.00

Turn as per Folio FA599

Rev: I & Dwg D3391 Rev: I

scribe batch # on fwd end at 90 degree

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Quality Control

Memo

0.00

1 9

M.M.L 11/11/14

1 8

M.M.L 11/11/14

111

QC8- Inspect parts - second check

0.00

111

QC

Quality Control

Ref 11-11-21

1 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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*Page 2

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N900040100

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1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

HAAS I

HAAS CNC VERTICAL MACHINING #1

0.00

BSR

11-11-19

1

0

HAAS CNC vertical machine #1

Memo

0.00

1-Machine as per Folio FA 599 Rev: AA & Dwg D3391 Rev: I
2-Deburr

130

130

QC

QC2- Inspect parts off machine FAI/FAIB

0.00

BSR

11-11-19

1

0

Quality Control

140

140

QC

QC8- Inspect parts - second check

0.00

BSR

11-11-21

1

0

Quality Control

W/O:		WORK ORDER CHANGES					
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Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

150

Skidtubes

Skidtubes

0.00

AT 11-11-22 (X1)

Skidtubes

Memo

0.00

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

160

160

CNC Bend 1

CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

0.00

Memo

0.00

Form as per Dwg D3391 Using Bend Prog 3391025

AT 11-11-22 (X1)

170

170

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

11-11-22

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

180

Skidtubes

Skidtubes

0.00

0.00

Memo
1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217
Wearplate Jig
*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per
Dwg D3391.

7-Deburr

3 DL 11/11/23

3 DL 11/11/24

BT
11-12-12

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00

5/12/13

190

QC

Memo

0.00

Quality Control

200

Chemical Conversion Coat per QSI005 4.1

0.00

CF 11-12-13
SPD

200

HandFinish

Hand Finishing

Memo

0.00

210

QC3- Inspect Part Finish

0.00

1 0 11-12-13

210

QC

Quality Control

0.00

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

220

Skidtubes

Skidtubes

Memo

0.00

0.00

2

SAO 11-12-13

230

230

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

SAO 11-12-13

235

235

HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

0.00

Memo

0.00

AND REALODINE AS PER PAR09-043

① 11-12-16

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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75961

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N900040100

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Stop

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1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

240

Powdercoat

Powder Coating

Memo

10:00
3200F
10:30

11/12/17

250

QC3- Inspect Part Finish

0.00

250

QC

Quality Control

Memo

0.00

11/12/17

260

HandFinishing

0.00

260

HandFinish

Hand Finishing

Memo

0.00

11/12/17

1-Install inserts as per Dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 719443

Sikaflex expiry date: 10-1-

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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75961

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Item ID: D3391-025

Accept

N900040100

Setup

Start

NS1

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Item Name: Aft Tube Assembly

Stop

NS2

Start Date: 02/11/2011 Start Qty: 1.00

1

Cust Item ID:

Required Date: 16/11/2011 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

270

QC5- Inspect part completeness to step on W/O

0.00

5/11/11

270

QC

Quality Control

280

Identify as per dwg & Stock Location

(75908) 0412-742-043.

1 11-12-19.

280

Packaging

Packaging

Memo

0.00

290

QC21- Final Inspection - Work Order Release

0.00

290

QC

Quality Control

Memo

0.00

11/12/19

ML
11-12-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

November-02-11 10:41:47 AM

Page 1

Work Order ID: 75961

75961

Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

Start Qty: 1.00

Required Qty: 1.00

Comments:

- IPP Rev B 06-02-07 ECN773 dwg rev. D EC
- IPP Rev:C 06-03-28 Update Manuf. Instructions JLM
- IPP rev D 07.03.20 revF dwg EC
- IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD
- IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC
- IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6014-090		Manufactured		No		100	Each	23.0000	1	1			**

D6014-090

ALUMINUM EXTRUSION

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

LG	23	
	23	

D3670-4-200

Manufactured

No

230

Each

128.0000

4

**

D3670-4-200

SPACER

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

LG	36	
71850	36	
LG001	92	
72851	92	

1	4	MM. C 11/11/09
SPD	11-12-13	

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 2

Work Order ID: 75961***75961*****Parent Item:** D3391-025***D3391-025*****Parent Item Name:** Aft Tube Assembly**Start Date:** 02/11/2011**Required Date:** 16/11/2011**Start Qty:** 1.00**Required Qty:** 1.00

D2646

Manufactured No

270

Each

73.0000

1

1

*******BL 11-12-19.****D2646***

Aft Cap

Location Loc Qty Loc CodeFP002 *73825.* 56

73294 56

FP004 5

68280 5

FP006 5

62678 5

FP-4 3

70945 1

71070 2

fp5 4

71038 4

D3537-1

Manufactured No

270

Each

108.0000

1

1

*********D3537-1***

Wearpad

*UP 11.12.19*Location Loc Qty Loc Code

FP002 101

74436 70

74597 31

FP017 7

69817 5

70686 2

1

*BL 11-12-19.**X 4095-049.**77436.*

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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D3537-7

Manufactured No

270

Each

9.0000

1

1

**

D3537-7

Wearpad

76537

BR 11-12-19

P 11.12.19

D3553-1

Manufactured No

270

Each

37.0000

1

1

**

D3553-1

Gasket

N/A P 11.12.19

N/A

D3553-3

Manufactured No

270

Each

22.0000

1

1

**

D3553-3

Gasket

N/A P 11.12.19

N/A

Location Loc Qty Loc Code

FP 4

71689 4

FP017 5

71689 5

FP013 37

56568 2

73155 35

FP013 37

31631 20

FP013 2

53480 2

Location Loc Qty Loc Code

FP 20

31631 20

FP013 2

53480 2

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Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

D3672-1

Manufactured No

270

Each

696.0000

2

2

*********D3672-1***

Phenolic Washer

BL 11-12-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-A	432	
52505 ✓	0	
66821 ✓	432	2.
ST074	264	
72229	264	

ALS4-1032-130

Purchased No

260

Each

2,279.000

14

14

*********AI S4-1032-130***

Insert

BL 11-12-09

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST280	119580.	14.
	119084	
ST281	279	
	117717	
	118237	
	118312	
	118386	

ALS4-1032-225

Purchased No

270

Each

2,422.000

12

12

*********AI S4-1032-225***

Insert

BL 11-12-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST281	2422	
108696	502	
110768	62	
118386 ✓	858	
118966 ✓	1000	12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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AN3C4A

Purchased

No

270

Each

2,385.000

6

6

**

AN3C4A

BOLT

BL 11-12-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST350	2385	
117313	2	
117688	5	
117872	22	
118112	16	
118451	2	
118706	364	
118838✓	974	6.
119328	1000	

AN3C5A

Purchased

No

270

Each

1,131.000

4

4

**

AN3C5A

Bolt

BL 11-12-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-A	119749	4.
115835	7	
ST350	1124	
116419	28	
117343	17	
117764	166	
117872	2	
118451	411	
119127	500	

AN960C10L



NAS1149C0332✓

Purchased

No

270

Each

0.0000

10

10

119736.

**

washer

10.

BL 11-12-19.

W/O:		WORK ORDER CHANGES							
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	75961
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391	Rev: H		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

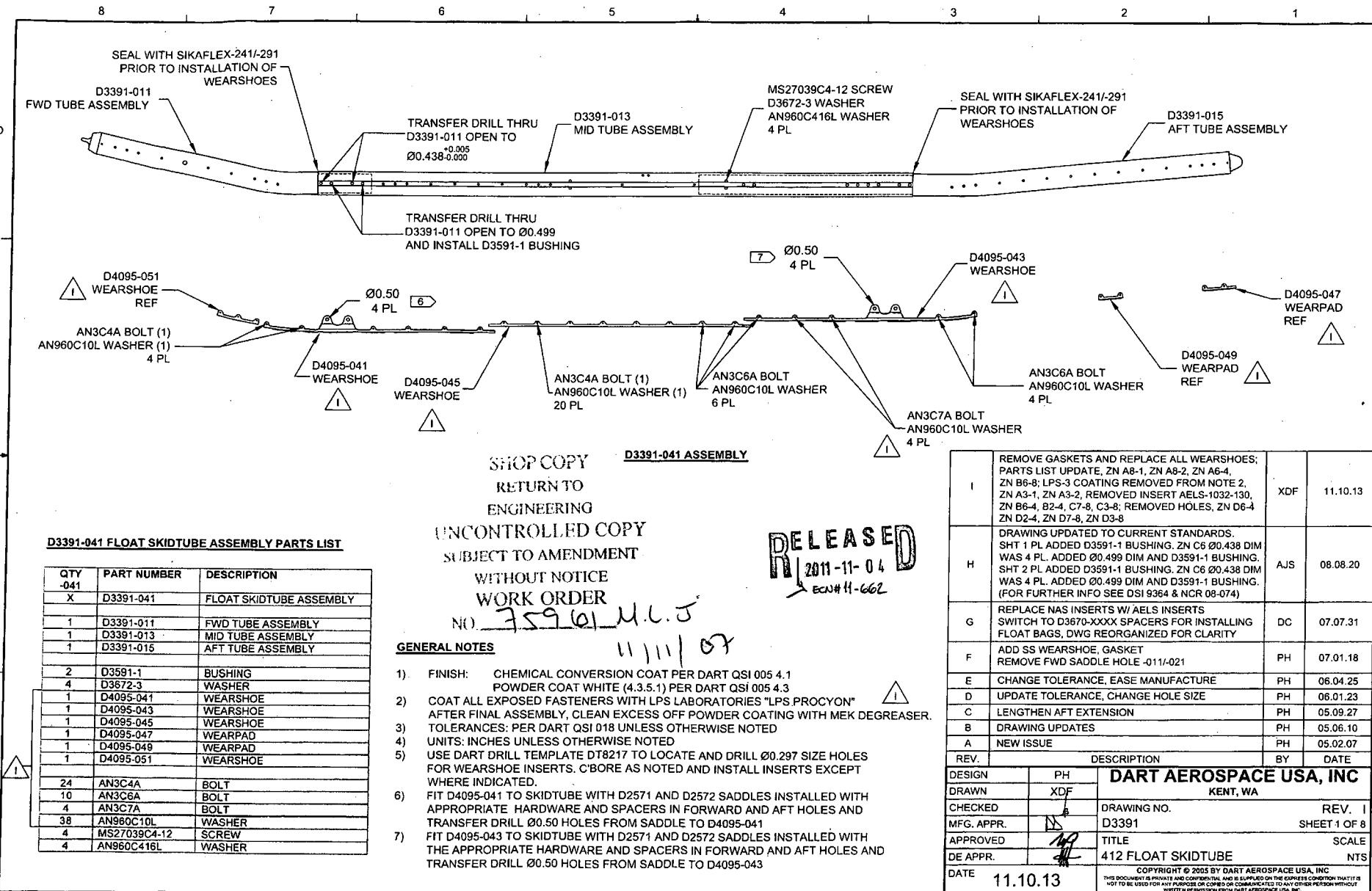
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.000	✓		tape	mm, L-02
3.500	+/-0.010	3.500	✓		vern	cwc-08
88.93	+/-0.030	88.930	✓		tape	mm, L-02
Ø3.200	+/-0.010	3.198	✓		vern	cwc-08
88.93	+/-0.030	88.930	✓		tape	mm, L-02
Ø3.750	+/-0.010	3.750	✓		vern	cwc-08
30° x 160" chamfer	+/-0.010	30° x 160	✓			

Measured by:	MMI	Date:	11/11/10
Audited by:	RC	Date:	11.11.21

HAAS Section						
1.526	+0.000/-0.030	1.510	✓		Vern	JLM 06
7.500	+/-0.010	7.505	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
3.300	+/-0.010	3.304	✓			
0.200	+/-0.010	0.200	✓			
3.520	+/-0.010	3.518	✓			
0.687	+0.010/-0.000	0.690	✓			
R0.062	+/-0.010	0.062	✓			
Ø0.484	+0.005/-0.001	0.484	✓			

Measured by:	BC	Date:	11.11.19
Audited by:	RC	Date:	11.11.21

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	
H	11.06.21	Dimension 44.995 removed	KJ	<i>10/11/21</i>



W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

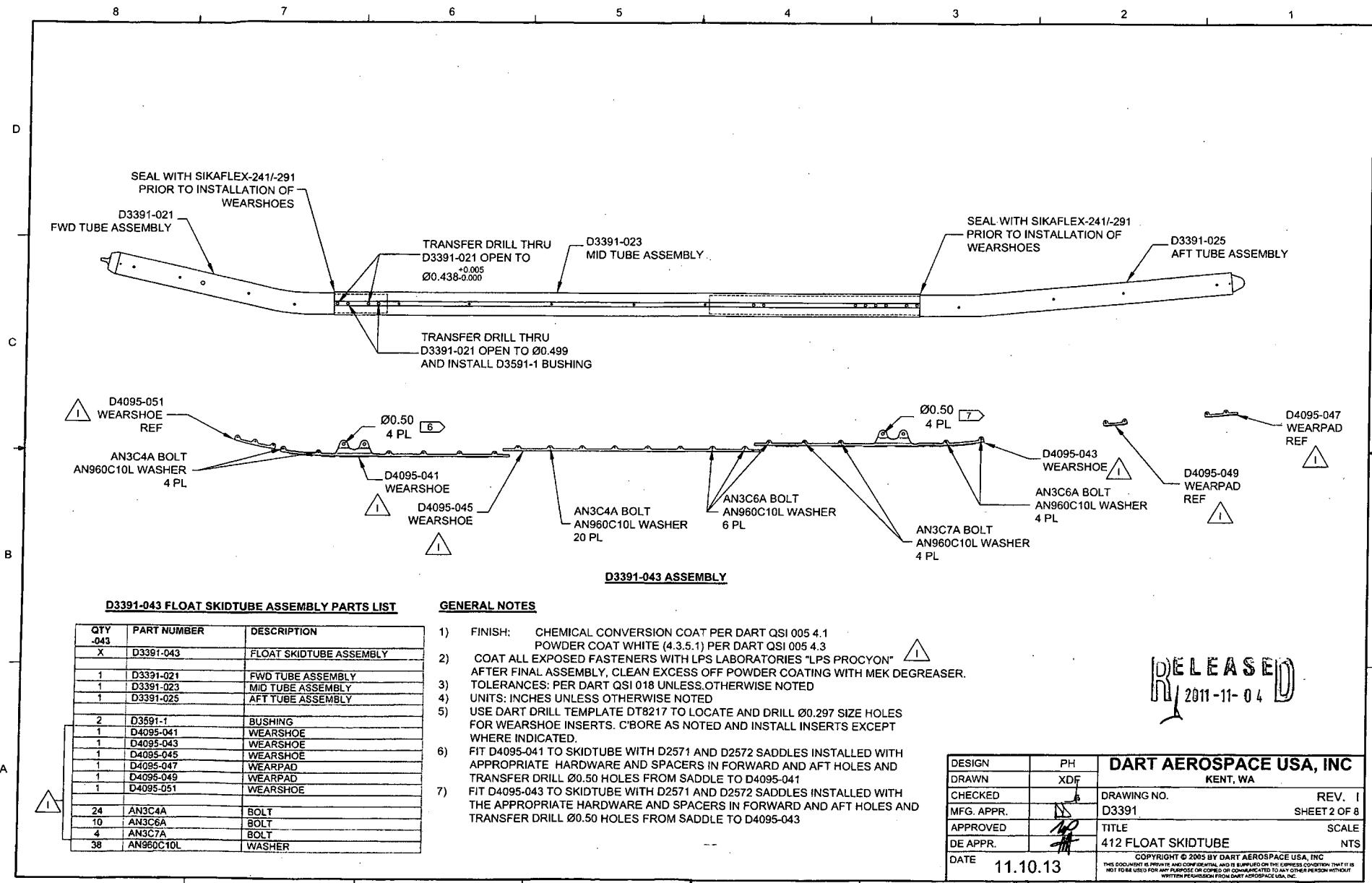
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75961



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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

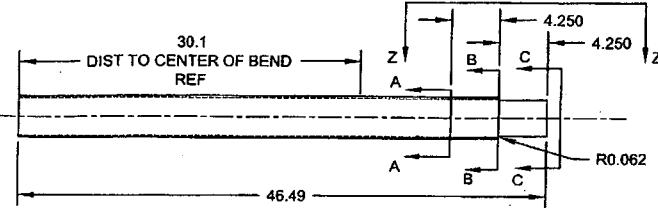
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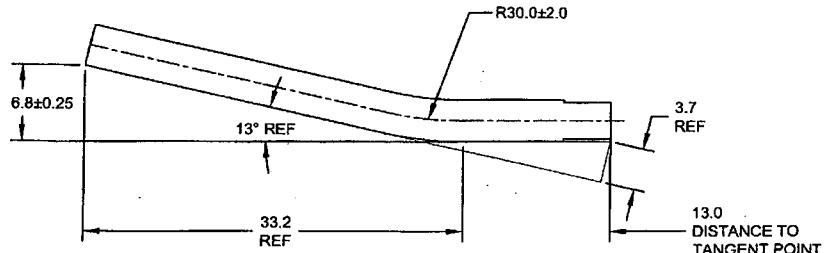
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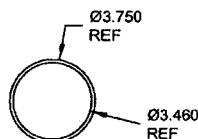


D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

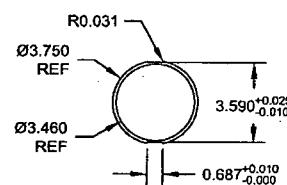


D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)

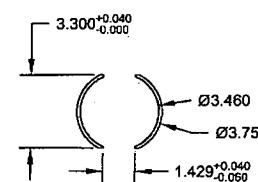
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SECTION A-A
SCALE 2X

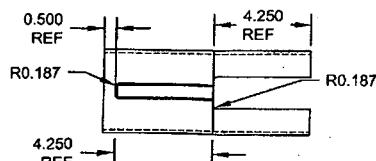


SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

B B



VIEW Z-Z
SCALE 2X

A A

DESIGN	PH	DART AEROSPACE USA, INC
DRAVN	XDF	KENT, WA
CHECKED		DRAWING NO. REV. 1
MFG. APPR.		D3391 SHEET 3 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
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2011-11-04

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
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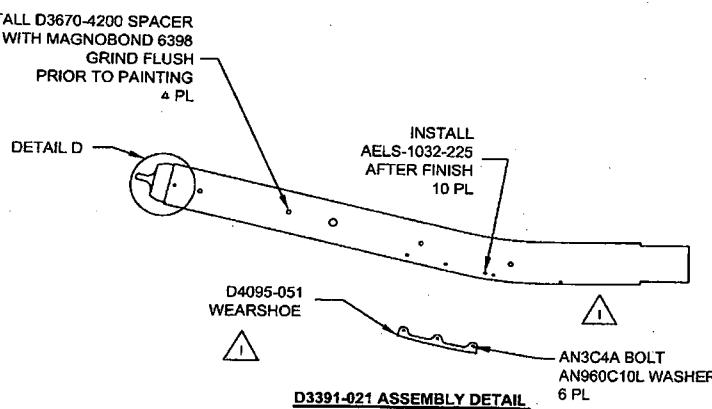
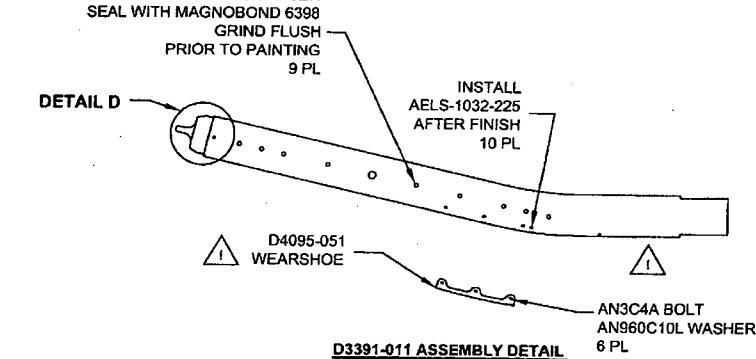
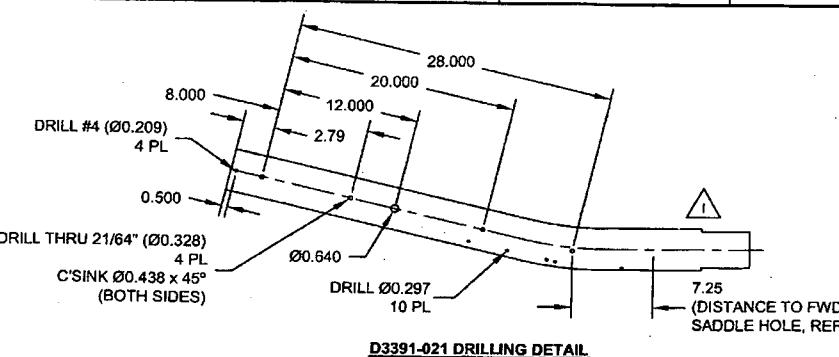
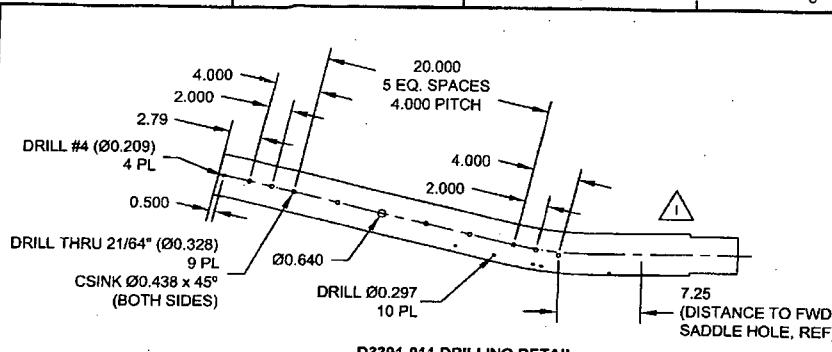
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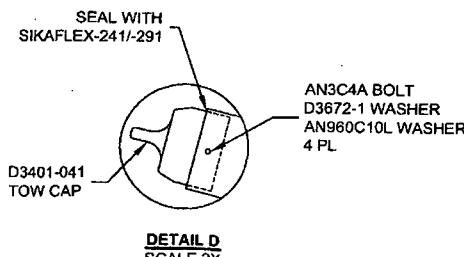
75961

8 7 6 5 4 3 2 1



D3391-011-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	D3391-011		FWD TUBE ASSEMBLY
X	D3391-021		FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT



DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	XDF	KENT, WA
CHECKED		DRAWING NO.
MFG. APPR.		D3391
APPROVED		REV. 1
DE APPR.		SHEET 4 OF 8
DATE 11.10.13		TITLE
		412 FLOAT SKIDTUBE
NTS		

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2011-11-04

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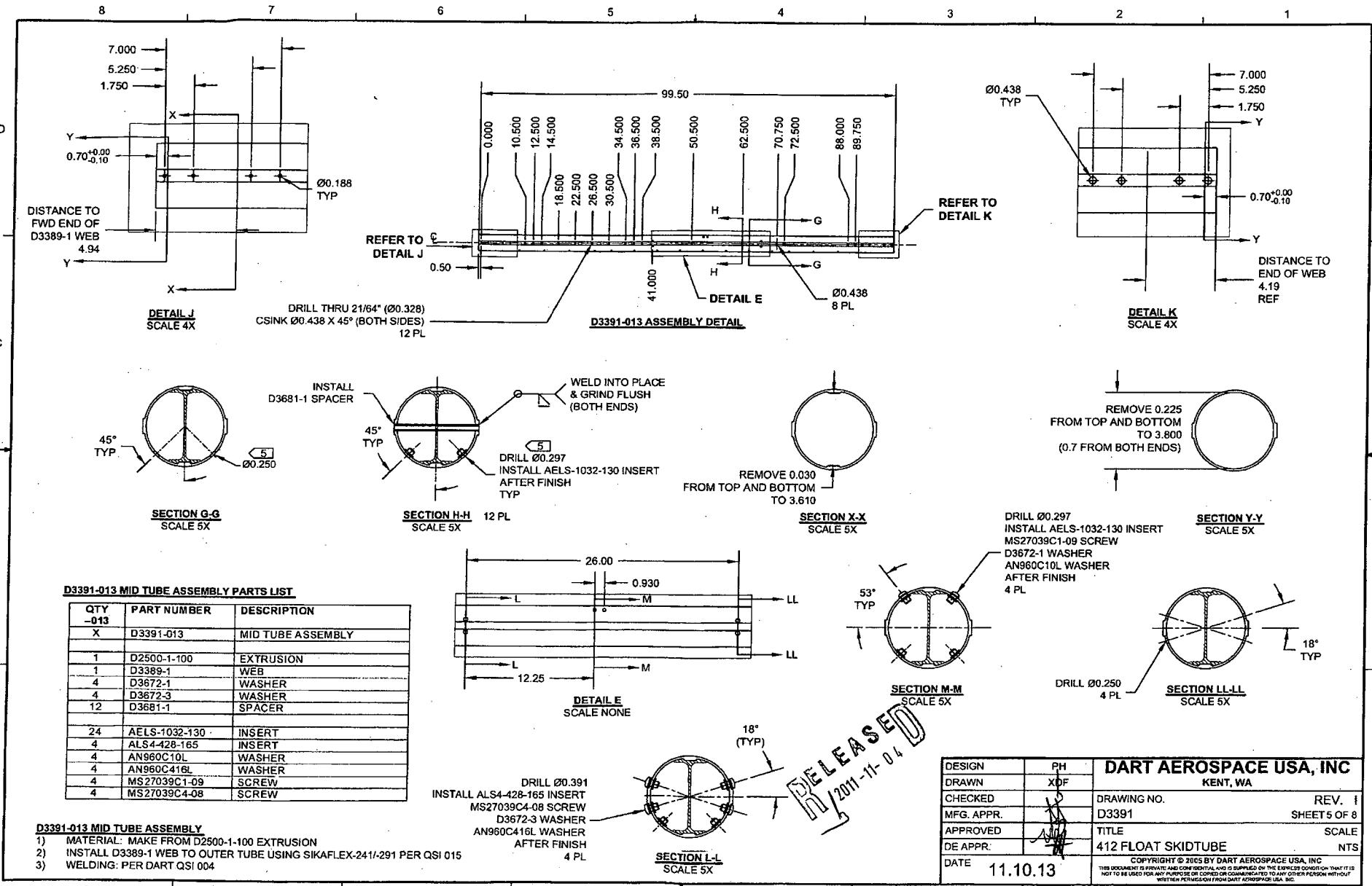
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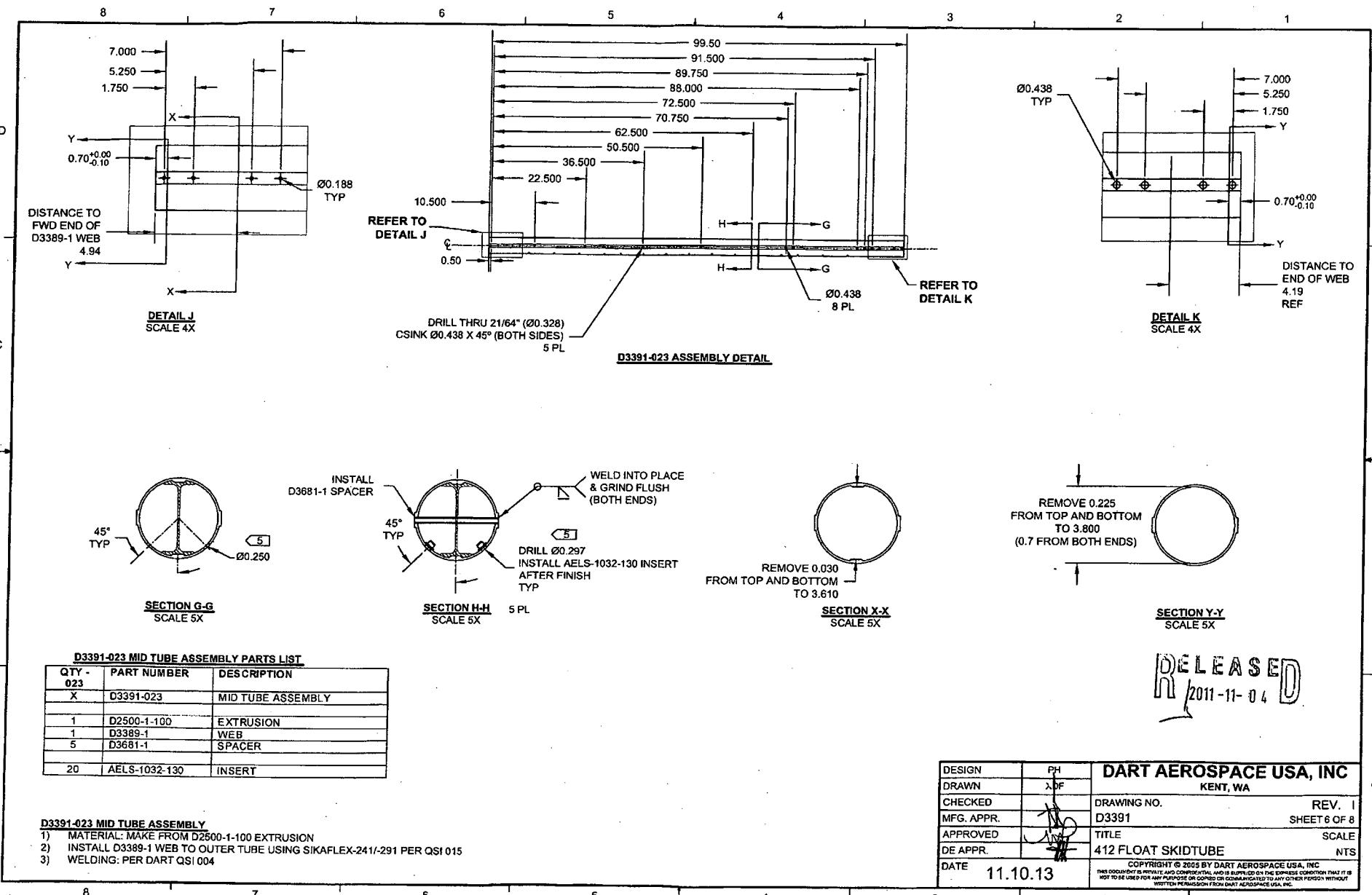
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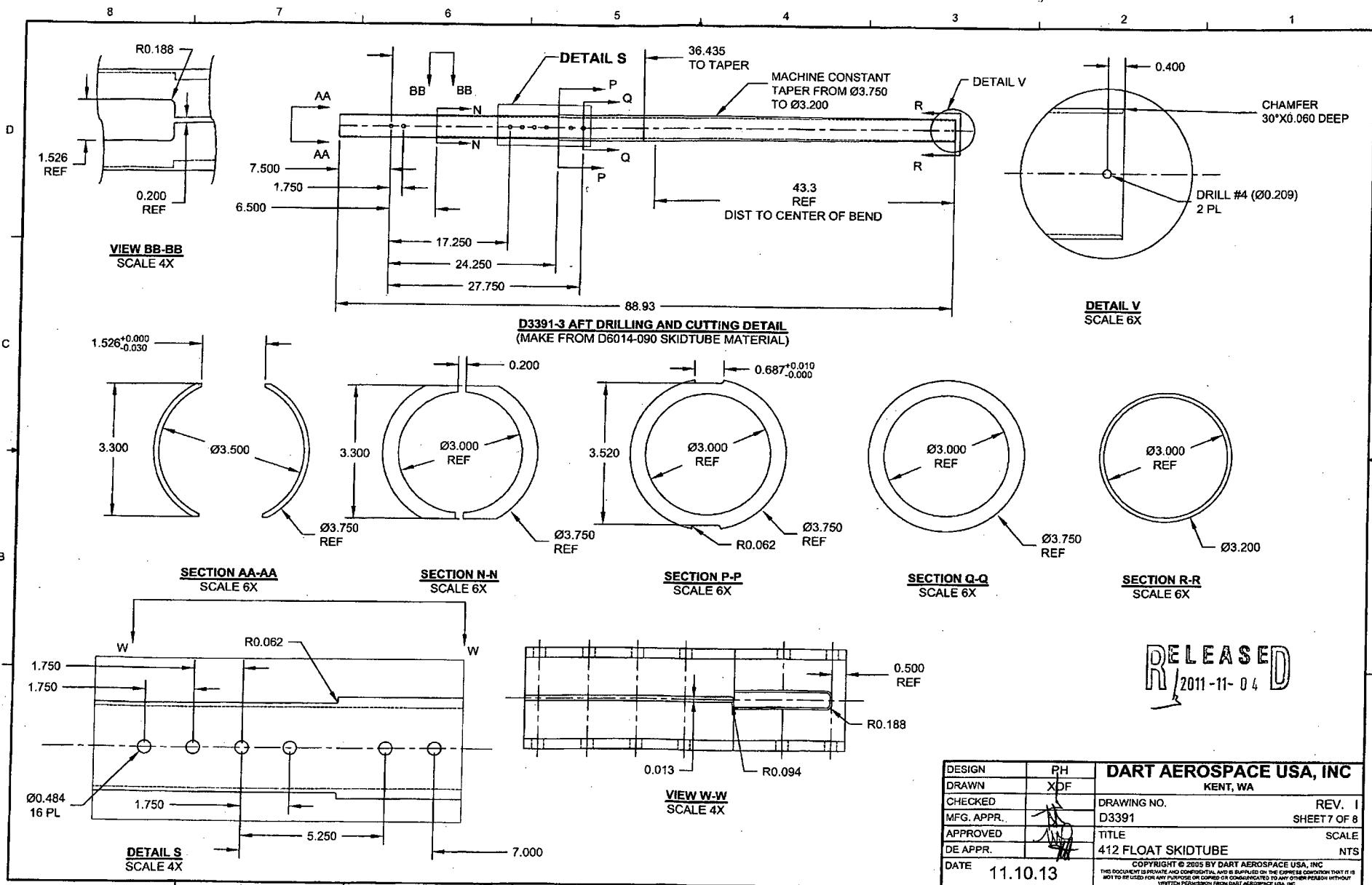
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